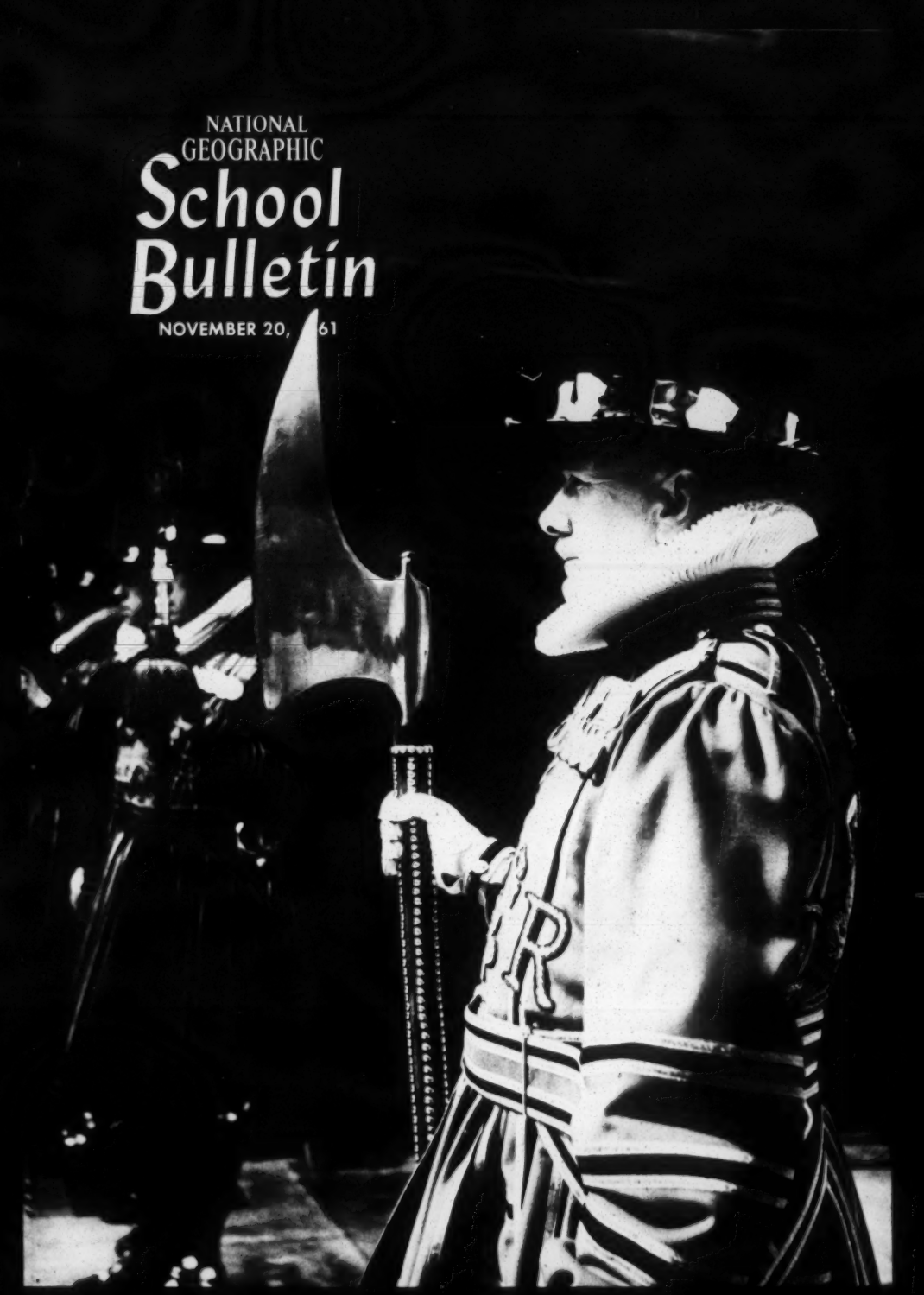
NATIONAL GEOGRAPHIC

School Bulletin

NOVEMBER 20, 61



TOWER OF LONDON guard parades with ceremonial ax
that once nudged doomed prisoners to their dungeons

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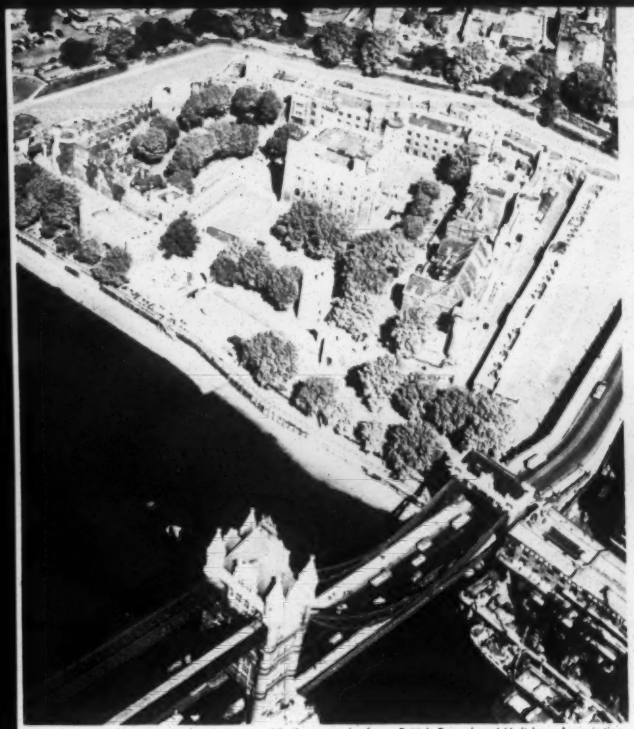

All photographs from British Travel and Holidays Association

TOWER OF LONDON is a group of towers, buildings, and walls beside the Thames River. It has held the state prison, the palace of many English rulers, the mint, observatory, and zoo. In olden days, keys to the Tower were the keys to the kingdom.

Today the Tower is a museum where visitors see the Crown Jewels, royal chapels, and Tower Green where royalty died under the ax.

The White Tower, oldest of the group, is in the center of the picture at left. Tower Bridge is at the bottom.

ENGLAND'S OUTGROWN KREMLIN

SUPPOSE you could vacation in a time machine instead of the family car. Instead of stopping, say, at the Grand Canyon, you could halt your machine at an interesting century.

Let's take such a tour through England's Tower of London. Like Moscow's Kremlin, this palace-fortress has known horror; but today, unlike the Russian center, is only a peaceful museum. Each gloomy Tower room has a story.

We'll head toward the 11th century, when the Tower began, then lay over at some important dates on the way home to 1961.

Approaching London in 1078 we see a walled city beside the Thames River, which is already a bustling highway of trade. Silk-clad noblemen dash through the city's narrow lanes in carriages drawn by white horses. Monks mingle with street vendors, soldiers in armor, and housewives out to do the day's marketing.

Just outside the city two men talk and gesture as they watch masons fit in place the stones of another wall. The King of England—William the Conqueror—is telling his architect that this fortress must be the strongest in all England. Its great walls must constantly remind his subjects who is king and master. It must be strong enough to withstand any attack by nature or man. It must also be large enough to house the king, his treasury, family, and servants.

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William is security-conscious, as kings have to be in these stormy days. Powerful nobles challenge his rule. Foreign invaders threaten his shores. William himself had invaded England from what is now France.

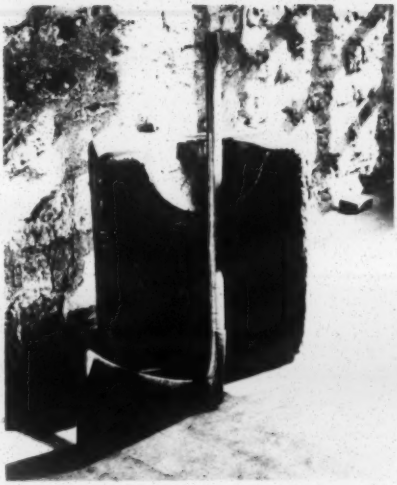
William's fortress is all that he desired. Walls, 15 feet thick at the base, soar 90 feet high. Turrets guard each corner. Basement dungeons can hold all who threaten the king. Storage chambers for food and arms would help the royal household withstand any siege. Two floors of spacious rooms provide living quarters for the royal family.

(Today, nearly 900 years later, William's fortress still stands. Neither earthquake [in 1274] nor German bombs could crumble it.)

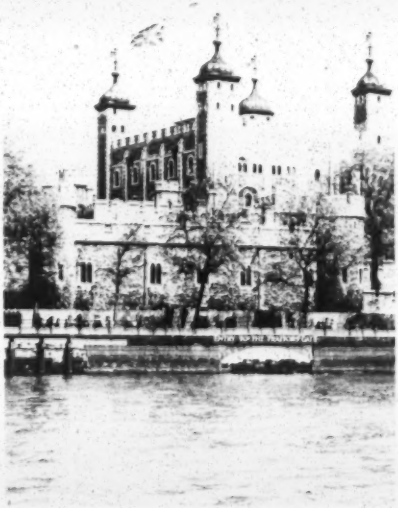
Let's point our time machine toward the late 15th century. The Tower looks quite different. William's successors have added to it until it begins to resemble today's 18 acres of towers, buildings, walls, and lawn. William's original fortress is white-washed, giving it a lasting name, the White Tower.

Now the Royal Menagerie (zoo) lives on the Tower grounds. The crowned heads of Europe have presented English kings with all manner of animals, from leopards to bears. Incidentally, one bear is not only given a food allowance, but tied with a long chain so he can fish in the Thames from Tower Wharf.

Tower dungeons have been filled often with churchmen, noblemen, and soldiers—anyone who defied the king.



HEADSMAN'S AX and block stand in the White Tower. Up to 400 years ago, kings and would-be kings beheaded rivals on such blocks. Since then, "London's Kremlin" has been outmoded by democracy and rule of law instead of ax.



THROUGH Traitors' Gate, many a subject lost his freedom. Prisoners were taken to the Tower by water, lest they be rescued by friends in London's crowded streets.

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CHAPEL of St. John the Evangelist in the White Tower. Royalty in residence worshiped here.

Londoners have about forgotten the bloodcurdling tales that spread from the Tower one night in 1477. "Murdered, stabbed while he prayed. The Duke of Gloucester did it," the gossips whispered about their former king, Henry VI.

That same Duke of Gloucester, now Richard III, sits on the throne of England. His brother, Edward IV, the unfortunate Henry's successor, has died—of natural causes, strangely enough.

Richard has reached the throne directly—by beheading whoever stood in his way. Only two obstacles remain: his brother Edward's young sons, heirs to the throne.

Richard already has them locked in the Tower. One August night as the two young princes sleep, three hired assassins creep into their room. One boy awakes, and is smothered before he can rouse help. The other is stabbed. They are buried secretly. (Their bones will not be uncovered for 200 years.) Their prison takes a permanent name: the Bloody Tower.

If we stop our time machine in the early 16th century, we see London hung with tapestries and golden cloth. It is 1509 and the day of Henry VIII's coronation. He is 18, a tall, handsome man, a sports lover, and the proud husband of a beautiful black-haired woman. The coronation procession through London's streets seems to usher in an era of peace and prosperity.

But the handsome Henry is no less a dictator than England's former monarchs, and those who lose his favor end their lives in the Tower. He defies the Church. Clergymen who refuse to bless his unholy ways are dumped in the Tower by the cartload.

His roving eye soon turns from his first wife to a second, and, before he dies, to a third, fourth, fifth, and sixth. Numbers two and five are beheaded.

Number two, Anne Boleyn, is the most famous. Charged with treason, but really the victim of Henry's fickleness, Anne walks to the scaffold with four ladies-in-waiting, and kneels to pray. Seconds later she is dead.

Today the spot where she died is paved—legend says grass will not grow there.

Years later Anne Boleyn's daughter is brought to the Tower through the same Traitors' Gate that Anne entered, and charged,

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TOWER RAVENS are carefully tended. Legend says the kingdom will stand only as long as ravens live here.

like Anne, with treason. Elizabeth, however, survives prison to become Elizabeth I and make her country a world power.

Turning our time machine toward 1961, we see that the Tower is no longer the state prison. Its last inmate was Nazi leader Rudolf Hess in World War II. The torture tools and headsman's ax are only curiosities in the White Tower to remind tourists of England's stormier days.

Every day thousands of visitors view the priceless Crown Jewels kept in Wakefield Tower.

Six or seven hundred years ago the Yeoman Warders were formed to act as a Tower police force. Warders are often mistakenly called "Beefeaters," though this nickname was originally given to the Yeomen of the Guard, who wear similar uniforms.

Warders still perform their duties and on special occasions wear the bonnet, ruff, and scarlet and gold tunic of Tudor times. (See cover.) During the World War II blitz, they replaced their caps with metal helmets.

As he has for centuries, the Chief Warder leads the lockup ritual at 9:53 every night. It is called the Ceremony of the Keys. Escorted by Tower guards, he locks several Tower gates. At the Bloody Tower a sentry stops the party with:

"Halt! Who comes there?"

"The keys."

"Whose keys?"

"Queen Elizabeth's keys."

"Advance, Queen Elizabeth's keys, all's well."

The Chief Warder passes through the Bloody Tower's arch and cries:

"God preserve Queen Elizabeth!"

"Amen," answer the guards. A bugler sounds last post. It is 10 p.m., time for the headless ghosts to take over. L.B.

CHOIRBOYS tour the Tower's edges to "beat the bounds"—hit boundary marks with sticks to assert the monarch's claim to the Tower.

SKYHOOK, Navy's Instant Rescue System

IMAGINE you're an explorer lost in a jungle, a scientist in trouble on the Antarctic icecap, or an astronaut down in the ocean far from land.

If current tests on a new Navy device prove successful, you may be able to haul yourself out of trouble with a "Skyhook."

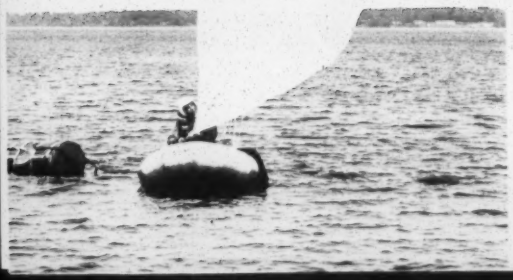
Here's how it works. A rescue plane flies over your life raft. A package parachutes into the water near you. Opening the pack, you climb into a harness the shape of a pair of overalls. To the harness is attached 500 feet of braided nylon line.

At the other end of the line you find a neatly folded plastic balloon plugged into a small bottle of helium. Open the valve. The balloon inflates, then floats into the sky, pulling the line up with it.

Now all you have to do is sit there, watch your balloon bob about—and wait for a second rescue plane.

The plane approaches at about 140 miles per hour. The pilot flies right into your line, snaring it with a specially designed nose yoke. You feel a gentle tug. Slowly you are hoisted to your feet. In the same motion, over the side of the raft you go, then—whoosh!—into the sky. About 100 feet up, your path flattens out and you find yourself on your back, sailing through the air behind the plane.

The hood over your head protects you from windblast. You even discover you can flip over like a diver if you want to look



1 **SKYHOOK VOLUNTEER** inflates the thin plastic balloon that will carry 500 feet of nylon line into the air. The line will be snagged by the...

2 ...**V-SHAPED** yoke built on the nose of a P2V *Neptune* airplane. In the center of the V, the line triggers a device that locks it to the nose....

down—volunteers at the Patuxent (Maryland) Naval Air Test Center do just that. Another Navy man, skyhooked for the first time, even managed a wave as he left the ground.

This aerial roller coaster is the dream come true of inventor Robert Fulton, Jr., of Newtown, Connecticut (a distant relative of the inventor of the steamboat). Both he and the Navy foresee great possibilities, although Skyhook is still experimental.

This technique, they say, could rescue an injured man from a remote spot or retrieve a missile cone. Last summer a plane crew even used the technique to snatch a pair of rare mastodon tusks from the Arctic tundra where planes could not land.

5 . . . **REELS HIM IN** like a fish on a line. (He is spread-eagled in the upper right corner.) Pretty risky? "Not at all," said a Navy doctor after his first pick-up. "The forces involved are about those of a roller coaster."

4 . . . **UP HE GOES,** lifted rapidly, clearing all obstacles. His harness distributes the aircraft's powerful pull on his body as the plane. . .

3 **FIRST PULL** is in the opposite direction (the plane has passed overhead, moving toward the left). The man swings like a pendulum across the water. Then, a split second later. . .

Story and Photographs by Arthur P. Miller, Jr., National Geographic Staff

UMI

Kuwait... Young, Rich, and Desirable

LIKE a cup of sand spread over a bucket of oil, the tiny sheikdom of Kuwait lies at the head of the Persian Gulf, a pivotal position in the often-troubled Middle East.

Although only about the size of New Jersey, Kuwait is rich—and getting richer. Its burning desert lies over what may be the largest pool of oil in the world.

Its poorer Arab neighbors, particularly Iraq, look on it hungrily. This year, the British granted Kuwait, which had been their protectorate, complete independence—but promised to stand by it if other nations tried to take over.

When the British left, Iraq claimed Kuwait, on the grounds that in the old Ottoman Empire Kuwait was part of the Iraqi province of Basra. British soldiers and tanks rushed in to prevent any take-over, and Iraq backed down.

Kuwaitis are determined to hang on to their independence, and their status as a separate country, which they have held since 1899.

Patriotism is not the only reason for this desire. Comfort is another.

Kuwait is the fourth largest oil producer in the world (after the United States, Venezuela, and Russia). Its known reserves total 62 billion barrels—more than twice those of comparatively huge Iraq to the north.

Oil pumped here brings in about half a billion dollars a year.

Photographs by George Rodger, Magnum

SHEIK Abdullah as Salim as Subah rules Kuwait with a generous hand.

All this goes to the ruler, Sheik Abdullah as Salim as Subah, and is his own personal property. He can do with it whatever he likes. If he wished, he could become the world's biggest spender—or most successful miser.

Instead, he invests the oil money in developing the country and making life more pleasant for its people.

In the port city of Kuwait, the sheikdom's capital, mud houses have given way to concrete homes, public buildings, hospitals, and schools.

Arabs in white robes drive gleaming American cars along broad, paved avenues, which have replaced narrow, winding alleys. Radio towers share the skyline with mosques and minarets adorned with flashing electric lights.

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Under a long-term program of social services and public works, Kuwaitis receive free medical care and free education.

Well-staffed and fully equipped modern hospitals have been built, including tuberculosis and mental institutions. Scores of new schools offer not only state transportation and lunches, but—even more remarkable in a Moslem land—training for girls as well as boys.

Oil money also provides water and electricity for private homes.

When the oil was discovered in 1938, some Kuwaitis were unhappy. It would have been better, they said, if prospectors had found water for their dry land.

But oil has turned into water.

TO REACH its European markets, chiefly Great Britain, Kuwaiti oil goes in tankers down the Persian Gulf, around Saudi Arabia, through the Red Sea and the Suez Canal into the Mediterranean.

HOSPITAL on wheels tours villages, giving free medical care. Here, an old Arab is examined as others wait.

A giant distilling plant built with oil money now turns the briny Persian Gulf into fresh water for all.

Suburbs have grown up, and the country houses of wealthy Kuwaitis rise on the once-empty sands of the desert.

Modern ways, however, have not spread to all of the sheikdom's 213,000 people.

While airplanes land at the new airport south of the city, Arab tribesmen still live among their camel herds in the sands beyond the suburbs.

City radios report the latest possibilities of nuclear war; but old blood feuds are the topic of the desert grapevine.

While urban Kuwaitis receive the best of care in new hospitals, faith healers and prophets roam among the nomads.

EVERY century, every decade makes its special demands on man. And man meets the new challenges by sending explorers to look into the unknown and find out what we need to know.

Call them pioneers, adventurers, seekers of the Holy Grail, or dedicated scientists; a special breed of men steps forward in each generation to advance the knowledge of man—often at the risk of life.

Such a man is test-pilot Joe Walker, who flies an experimental rocket plane, the X-15, nearly six times the speed of sound. Parts of his "flying firecracker" heat up to 1100 degrees Fahrenheit. The slightest mistake at the controls or failure of a mechanical part would be fatal.

From the fringe of earth's atmosphere on a recent record-breaking flight, Joe Walker radioed, "I'm taking a look to see where we are now."

What he must have seen! The Pacific coast far to the west, California's green valleys, the snow-capped Sierra, Death Valley, Nevada's deserts and deep-shadowed mountains beneath him, and Utah's Great Salt Lake to the northeast.

It pleases my fancy to wonder if Joe Walker saw Walker Pass in California's Sierra, or Walker Lake and Walker River in Nevada. All were named for another Joe Walker—the discoverer of Yosemite Valley, the leader of the first exploring party to cross the Sierra Nevada.

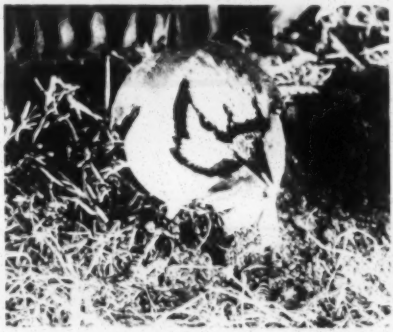
WORD OF THE WEEK

Sierra (sĭ-ĕr'ə) n. *Spanish for saw and so for sawtooth peaks of a mountain range. Spanish explorers brought Sierra to the New World in Sierra Nevada (snowy range) and Sierra Madre (mother range).*

In 1833 and 1834, Joe Walker (No. 1), blazing trails for immigrants to follow, trudged the earth at the rate of 1,000 miles a year under the sky that Joe Walker (No.2) rockets through at nearly 4,000 miles an hour.

Washington Irving described Joe Walker (No. 1) as a modest man "brave in spirit, though mild in manners"—a fit description for his living namesake. Exactly 100 years ago the old pathfinder led a company from the California gold fields to central Arizona. He crossed the Mojave Desert near where Edwards Air Force Base now spreads. When Joe Walker (No. 2) is on the ground, this is where he can be found.

LOOK AROUND



Bruce R. Young

By looking around, you might discover something no one noticed before. It happened to an Australian schoolboy named Peter Bradley.

He noticed that starlings sometimes picked up ants and rubbed them under their wings. He wanted to know why, so he wrote to the nature editor of a Melbourne paper. The editor didn't know, so he checked with scientists.

They looked around themselves, determined that birds did do this, and pronounced the habit an "enigma," which meant they didn't know, either.

That was in 1934. Scientists are still studying this **anting,** watching captive birds like the blue jay above, who has an ant firmly in his bill and is about to rub his feathers with it.

If you watch carefully, you may see wild birds doing the same thing. Maybe, you'll discover *why* they do it—and set the scientists' minds at rest.

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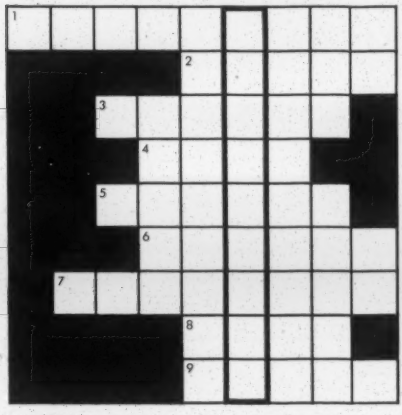
GEO-GRAPH

Solve the key word and learn a Yeoman of the Guard's nickname. All words used appear in the Tower of London story, pages 85-89.



ACROSS

1. Name of two English queens
2. King murdered in the Tower
3. Birds living at the Tower
4. Neckware for a Yeoman Warder
5. Beheaded second wife of Henry VIII
6. London's River
7. Gate through which prisoners entered
8. The Chief Warder performs the ceremony of the _____
9. The _____ Jewels are kept in the Tower

LAST WEEK'S ANSWER

Italy Observes 100th Birthday

Italians in 1961 are celebrating 100 years of freedom and unity as a nation.

For centuries, mountains and invaders kept Italy so disjoined that it did not even have a common language. Then at Turin, in the spring of 1861, Victor Emmanuel was proclaimed King of the first united Italian nation since the collapse of Rome. Five months earlier, Emmanuel and Garibaldi, the two strong men of Italy, agreed to join their conquests.

Now booming and prosperous, Italy totals 51 million people. Since the end of World War II, when a third of Italy's productive power lay in ruins, the nation has become one of Europe's pacesetters in manufacturing. Output has tripled in 15 years.

New Book Tells of Aid to Deaf By Alexander Graham Bell

Most of us know Alexander Graham Bell invented the telephone—but how many know this was an out-growth of his life's work, helping the deaf? Or that his deaf wife, Mabel Hubbard Bell, spurred him on to great discoveries in a world of sound she could never know?

These points are strongly brought out in a new biography of the inventor, published today. *Make a Joyful Sound* by Helen E. Waite (Macrae-Smith, Philadelphia, $3.95) is the first biography of Bell to use the huge collections of manuscripts, letters, and notebooks left by him.

This material, held by the National Geographic Society, was made available to Miss Waite by the daughters of Dr. Bell, Mrs. Elsie May Bell Grosvenor and Mrs. Marion Bell Fairchild.

Dr. Gilbert Grosvenor, chairman of the Board of the National Geographic Society, and Dr. Bell's son-in-law, has written a foreword to the book. Mrs. Grosvenor has added a postscript.

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Soviet Maps Due for Overhaul As the Legend of Stalin Dies

IN THESE days of change, map makers get little rest.

Hardly recovered from redrawing the map of Africa to show the new countries, they now face the possibility of redoing Russia.

The Russians now declare (as the rest of the world knew all along) that Joseph Stalin was not a kind, benevolent father to all Soviet citizens, but a scheming murderer who stayed on top of the Russian heap by killing off anyone he feared—just like England's 15th century kings (see pages 86-89).

Stalin's body has been removed from the Lenin-Stalin tomb on Moscow's Red Square, where it had been displayed for public reverence since his death in 1953.

Now comes the problem of renaming more than 100 geographical features that were named in Stalin's honor when he was in control. Many will revert to older names.

The city that stands as the Russian symbol of World War II resistance to the Nazis, Stalingrad, gives a double problem. Before the Communists took over, it had been called Tsaritsyn—after an earlier series of dictators.

National Geographic Photographer B. Anthony Stewart

Russians line up in Red Square to see the mummy of Lenin (alone) in his squat tomb.

Russia's satellite countries are already making some name changes.

This year, Bulgaria quietly switched the name of its largest Black Sea port from Stalin back to the original Varna. Stalin Gulf is again called the Gulf of Varna.

The Romanian city Oraşul Stalin has again become Braşov—as it had been since it was founded in the 13th century.

Across the wall from West Berlin, the East Germans are reported planning to dismantle their big Stalin monument, and change the name of their most famous avenue, Stalinallee, to Leninallee.

When Khrushchev finishes rewording the map of Russia, he can start rewriting its official history. In school books, Stalin will change overnight from god to devil.

Discussing the changes, one party worker said, "Everything is going to be different from now on."

His co-worker said, "No, comrade, you have it wrong. Everything *was* different."

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IN THIS ISSUE—

- Tower of London
- Rescue by Skyhook
- Rich Little Kuwait

... and other features, including Stalin and Italy

Editor—Ralph Gray
Assistants—Arthur P. Miller Jr., Frank Sartwell, Liva Baker, Lea Ridgley

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NEXT WEEK—
Madagascar

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